

California Renewable Energy Transmission Initiative

Mission Statement

April 25, 2008¹

Introduction

California has adopted energy policies that require substantial increases in the generation of electricity from renewable energy resources. Implementation of these policies will require extensive improvements to California's electric transmission infrastructure. The California Renewable Energy Transmission Initiative (RETI) is a statewide planning process that will identify the transmission projects needed to accommodate these renewable energy goals. RETI is an open and transparent collaborative process in which all interested parties are encouraged to participate.

RETI will assess all competitive renewable energy zones (CREZs) in California and neighboring areas that can provide significant electricity to California consumers by the year 2020. RETI also will identify those CREZs that can be developed in the most cost effective and environmentally benign manner and will then use existing transmission planning processes to prepare transmission plans of service for those CREZs identified for development.

The RETI effort is supervised by a Coordinating Committee comprised of California entities responsible for ensuring the implementation of the state's renewable energy policies and development of electric infrastructure, namely:

- California Public Utilities Commission (CPUC)
- California Energy Commission (Energy Commission)
- California Independent System Operator (California ISO)
- Southern California Public Power Authority (SCPPA)
- Northern California Power Agency (NCPA)
- Sacramento Municipal Utility District (SMUD)

Output from RETI will inform renewable generation procurement and transmission permitting processes at the CPUC, transmission corridor designation and renewable generation siting processes at the Energy Commission, the existing transmission planning process at the California ISO, including any modifications to that planning

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process resulting from compliance with Order No. 890 of the Federal Energy Regulatory Commission, the California ISO's large generator interconnection reform process, and renewable generation and transmission planning decisions at participating publicly-owned utilities (POUs). More specifics about how RETI's results will ultimately be utilized by state entities and POUs are presented in Addenda to this Mission Statement. For further information, review the RETI website at www.energy.ca.gov/reti/ or contact members of the Coordinating Committee identified below.

Background

California law requires retail sellers of electricity to obtain 20% of their supply from renewable energy sources by 2010.² The Energy Action Plan adopted by the CPUC and the Energy Commission, and endorsed by the Governor, seeks to increase renewable energy to 33% of state supply by 2020. Several California publicly owned utilities (POUs) have adopted similar goals. The reduction of greenhouse gas emissions required by AB 32 is likely to require increased procurement of renewable energy on the scale anticipated by the state Energy Action Plan.

RETI was initiated as a joint effort among the CPUC, the Energy Commission, the California ISO, IOUs, and POUs. It operates as a stakeholder planning collaborative and involves a broad range of participants, first to gather information and advice, and then to build active and consensus support for specific plans for renewable energy and related transmission development.

RETI is building on California's most recent experiences in developing renewable resource areas. In 2003, the Energy Commission adopted the *Renewable Resources Development Report* that identified renewable energy resources in every county, including 4,500 MW of wind power in the Tehachapi Wind Resource Area.³ In 2004, the CPUC ordered the formation of the Tehachapi Collaborative Study Group⁴ to develop a conceptual transmission plan to connect the Tehachapi Wind Resource Area to the state transmission grid using a collaborative stakeholder planning process. The California ISO approved the Tehachapi Transmission Plan in January 2007, and the CPUC approved the first phases of Tehachapi upgrades shortly thereafter. Southern California Edison Company filed an application for the remaining Tehachapi upgrades in June 2007.

² SB 1078 (2002) established a statewide Renewable Portfolio Standard; SB 107 (2006) accelerated the 20% target date to 2010. POUs have also committed to achieve similar goals.

³ Energy Commission Report P500-03-080F; adopted November 19, 2003, pursuant to SB 1038 and SB 1078.

⁴ Pursuant to CPUC Decision (D) 04-06-010.

Mission and Purpose

Meeting California's renewable energy policy goals will require rapid development of renewable resource areas throughout the state and possibly in adjoining states. It will also require the construction of new transmission infrastructure to deliver energy from those renewable resource areas to the electric grid. This effort must be guided by an understanding of the economic and environmental impacts of this development so that it progresses in a logical and appropriate manner. RETI was formed in recognition of the significant amount of work that needs to be done in a coordinated manner to meet these goals.

RETI will help facilitate planning and permitting processes for the CREZs, ensure consistency in the analytical processes, avoid duplication, include all interested parties, strive for consensus among those parties, and produce timely information through a transparent process that policy makers can rely upon to decide how California can best meet its renewable energy policy goals. Specifically, RETI will identify the next major CREZs to be developed and will work through the California ISO's and POU's planning processes to provide transmission plans of service to access these zones.

Process and Scope of Work

RETI's work will be organized into three phases. Phase 1 will be performed by consultants working under the direction of the Stakeholder Steering Committee:

Phase 1 – Identification and ranking of CREZs

Phase 1A:

- 1) Conduct a thorough review of the literature and other sources to collect and compile data on renewable energy resource potential in California and neighboring states;
- 2) Develop assumptions and evaluation methodologies to be used in detailed project-level assessment of renewable resources; and
- 3) Perform a high level assessment of promising renewable resources in California and neighboring regions, characterize renewable energy technologies, and forecast improvements in technology characteristics through 2020 in order to identify promising technologies/resources carried into Phase 1B for project-level assessment.

Phase 1B:

- 4) Identify, for the resources prioritized by Phase 1A, specific developable renewable projects in California and neighboring areas through a project-level assessment that considers commercial interest, resource quality, siting constraints, environmental impacts, enabling infrastructure, and other factors;
- 5) Apply the methodology for resource valuation developed in Phase 1A, estimating the generation, high-level transmission and integration costs, and the energy and capacity value, of all projects identified in the resource assessment, resulting in a “ranking cost” assigned to each project;
- 6) Develop supply curves based on ranking costs of all identified projects;
- 7) Group projects into CREZs, based on geographical proximity, development timeframe, shared transmission constraints, complementary generation profiles, and additive economic benefits; and
- 8) Describe and rank all CREZs according to cost effectiveness, environmental impacts, development and schedule certainty, and other factors to provide a renewable resource base case for California.

Phase 1 Deliverable: Statewide renewable resource assessment

Phase 1 Outcome: Creation of a short-list of top-priority CREZs

Phase 2 – Refinement of CREZ analysis for priority zones and development of statewide conceptual transmission plan

- 1) Expand and refine the analysis of priority CREZs, including siting constraints;
- 2) Identify potential environmental, jurisdictional, and technological show-stopping issues for transmission and generation siting;
- 3) Prepare development resource mix scenarios and model capacity expansion;
- 4) Develop conceptual transmission plans in coordination with the California ISO and publicly-owned utilities for each CREZ;

Phase 2 Deliverable: Statewide conceptual renewable resources transmission plan with recommended CREZ development scenarios that is coordinated with, and informed by, the overall statewide transmission plan developed by the California ISO and the transmission plans developed by the POUs.

Phase 2 Outcome: Identification of conceptual transmission plans for priority CREZs and identification of potential transmission corridors for consideration under the Energy Commission SB 1059 Designation Process.

Phase 3 – Develop transmission plans of service for identified CREZs

- 1) Perform exhaustive analyses of highest priority CREZ, including generation and transmission scenarios and siting alternatives;

- 2) Identify the transmission project sponsor(s) for each CREZ;
- 3) Prepare transmission plan(s) of service through existing California ISO and POU transmission planning processes and in coordination with regional planning efforts, taking into consideration project phasing, the results of production cost models (as appropriate), power flow, the need for firming resources, and contingency analysis, etc.;
- 4) Achieve stakeholder consensus on the need for each transmission project, including a determination of need by the California ISO, POU or other relevant planning authority;
- 5) In consultation with the California ISO or appropriate POU, determine the need for the California ISO or appropriate POU to initiate WECC line-rating process if necessary.

Phase 3 Deliverables: Transmission plans of service for each high-priority CREZ together with a consensus determination of need that is documented in the California ISO and POU transmission plans.

Phase 3 Outcome: Initiation of the permitting process for high priority, near-term transmission projects.

Collaborative Planning Process, Governance and Communications

The *Coordinating Committee* will provide policy direction to and oversee the overall RETI process. The primary purposes of the Coordinating Committee will be to:

- Ensure that the RETI process produces the information needed for renewable energy and transmission development policy decisions by relevant organizations;
- Keep the process on schedule; and
- Provide direction on peripheral policy issues when necessary.

The Coordinating Committee will meet by conference call every other week, and will meet monthly after the Stakeholder Steering Committee meetings.

The *Stakeholder Steering Committee* (SSC) will be the primary working group in RETI, and will be comprised of key stakeholder representatives: transmission owners/providers; generators; utilities/power purchasers; local, state and federal permitting agencies; landowners; and environmental and public interest organizations. The SSC will develop and adopt draft work plans for the effort and ensure the active participation of its member organizations. The SSC will consult regularly with the

Plenary Stakeholder Group and form working subgroups to complete the scope of work and other tasks as necessary.

The SSC will meet monthly. Membership will be limited to facilitate work on substantive tasks. All California transmission owners/providers, the CPUC, CEC, US Bureau of Land Management (BLM), US Forest Service, and the California ISO will participate on the SSC; all other classes of stakeholders will select one person to represent them on the SSC who will represent their class of stakeholders. The SSC will report its work and the progress of its working subgroups to the Coordinating Committee and to the Plenary Stakeholder Group.

The *Plenary Stakeholder Group (PSG)* will review the work of the SSC to ensure its views are represented. The PSG will include all participants and interested parties and will meet approximately once every six to eight weeks to review progress, and provide input and advice to the SSC and its working subgroups. The definition of renewable resource areas and conceptual transmission plans to access them will represent, to the extent possible, a consensus of the Plenary Stakeholder Group. Each participating organization in the Plenary Stakeholder Group, and the SSC, including the POUs and the California ISO, will pay its own costs.

On behalf of the Coordinating Committee, the Center for Energy Efficiency and Renewable Technologies (CEERT) will⁵:

- ☐ Identify stakeholder organizations that should be active in the RETI process.
- ☐ Recruit stakeholder participation in RETI on an ongoing basis.
- ☐ Organize stakeholders into effective working groups.
- ☐ Engage all stakeholder representatives and ensure they are actively representing the interests of the stakeholders they represent.
- ☐ Mediate disputes among stakeholder representatives and organizations.
- ☐ Support the work of all RETI committees and working groups as necessary.
- ☐ Organize and notice all meetings and ensure that agendas are prepared and are available in advance of all committee and working group meetings and summarize meeting results for distribution among participants.
- ☐ Lead meetings to ensure active participation by stakeholders such that key points and action items are identified, documented, and resolved.
- ☐ Organize stakeholder input for consultant-prepared RETI reports and other documents.
- ☐ Work with the California ISO and POUs to assure that the RETI outcomes are appropriately represented in their planning processes.

⁵ CEERT is funded by a Public Interest Energy Research (PIER) contract with the Energy Commission. SCE participation is pursuant to CPUC Resolution E-4052.

To facilitate transparency, the Energy Commission will manage a website where information about the work of all RETI committees and working groups will be available both for participants and the general public.

RETI committees and working groups will adopt ground rules to support cooperative group interaction, encourage all participants to express their views, and prevent any party from imposing its interests or dominating discussion. CEERT will facilitate project meetings toward this end.

RETI will endeavor to make its work and decision-making as transparent as possible. Key points and action items will be documented to establish a written record of the group's progress. Data on planning assumptions will be shared among participants; working subgroups will devise appropriate methods to safeguard any competitively sensitive or confidential information. In sum, RETI will pursue its technical work in ways that help build stakeholder support for its recommended renewable resource area transmission development plans. Transparency and collaboration are essential to the development of the required broad support.

Working group participants agree to work in good faith to achieve consensus support for a recommended development plan. If it proves impossible to arrive at a consensus recommendation, RETI reports will note disagreements with the majority plan and the case for alternative plans preferred by dissenting parties.

Participants

The participating organizations intend that this joint planning process bring the knowledge and interests of key stakeholders together to construct a renewables development plan including comprehensive transmission solutions that provide the greatest statewide benefit at the least cost. Stakeholder involvement is essential to development of plans that minimize the environmental impacts of proposed generation and transmission development, thereby facilitating project permitting. RETI is intended to lay the foundation for timely approval and construction of a mix of renewable generation and associated physical transmission upgrades and for procurement of renewables by all retail providers of electricity. Consequently, active stakeholder support for the overall development plan is essential.

Participation is open to all interested parties. These include, but are not limited to:

- Transmission owners/providers active in California, Nevada, Arizona, Washington, Oregon, British Columbia, and Baja, Mexico;
- Wind, solar, geothermal and biomass power companies/generators;
- All retail providers of electricity and other potential power purchasers;
- Counties and local jurisdictions;
- State and federal agencies, including representatives from BLM, USFS, and the Military;
- Native American Tribal Governments;
- Landowners;
- Environmental and public interest organizations;
- Energy Commission; CPUC; California ISO, utility regulatory commissions of neighboring states;
- Other interested parties.

For Further Information:

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Addendum A
California Independent System Operator (California ISO)
Process Roadmap

The California ISO intends to integrate RETI with its Generation Interconnection Process Reform (GIPR) initiative as well as its transmission planning process in accordance with the Federal Energy Regulatory Commission's Order No. 890. Following are explanations for how the California ISO envisions RETI working with our processes. It is the California ISO's hope that the information from RETI will be available in time to inform the current year's planning cycle and reform efforts.

Generation Interconnection Process Reform (GIPR) initiative

The California ISO is currently engaged in a stakeholder process to reform its large generator interconnection procedures, known as the Generation Interconnection Process Reform (GIPR) initiative. Following stakeholder meetings and guidance from the California ISO Governing Board, the California ISO expects to file revisions to its open access transmission tariff with FERC reflecting GIPR in late May/early June 2008. A decision from FERC is anticipated by August 2008.

The GIPR is intended to address the backlog in the California ISO generation interconnection queue, much of which is made up of renewable project proposals. For example, the queue currently has 188 Interconnection Requests ("IRs") totaling 62,608 MW. Of these, 42,526 MW are associated with renewable resources.

Under the GIPR proposal, this current backlog of IRs and others will be "cleared" through group studies. The IRs will be grouped based upon electrical similarities and are intended simply to identify cost assignments. Actual network upgrades to permit interconnection of the generation will be designed through the transmission planning process based upon those IRs that actually execute Interconnection Agreements (IAs).

The California ISO welcomes RETI information that can inform development of study assumptions that focus our group study effort. Specifically, the California ISO would look to RETI to define development potential in designated competitive renewable energy zones (CREZs) that would be used to "cap" the assumed quantity of generation in a particular area should the aggregate quantity of capacity of all IRs in that area exceed the identified RETI amount. Imposing such a limitation will not lead to any rejection of an IR. Rather, use of the RETI information is intended to increase the likelihood that the evaluated resource scenario will "solve" and lead to reasonable results.

For example, if the CREZ being studied has 20,000 MW in the California ISO queue, but RETI has recommended a development potential of 10,000 MW for that CREZ, the California ISO will adjust the study model to reflect 10,000 MW of resource within that CREZ for purposes of developing cost allocations for potential network upgrades.

California ISO Annual Transmission Planning Process

The California ISO's annual Transmission Planning Process is an integrated, open, participatory and transparent process that focuses on ensuring reliable, economically efficient, and non-discriminatory use of the California ISO Controlled Grid. As a general matter, there are three stages of the Transmission Planning Process: 1) development of Unified Planning Assumptions and Study Plan, 2) performance of studies identified in the Study Plan using the Unified Planning Assumptions, and 3) documentation of the studies through the publication of the Transmission Plan. As identified below, we anticipate that information provided by RETI can impact the first and second stages of the Transmission Planning Process.

The objective of the Unified Planning Assumptions and Study Plan is to determine the goals of, and agree upon assumptions for, the various studies to be performed as part of the second stage of the upcoming Transmission Planning Process cycle. In other words, this first stage is intended to provide stakeholders with a "road map" - both technical and procedural - for that year's planning cycle. Included in this roadmap is the designation of "CREZs" (Competitive Renewable Energy Zones) identified as high priority renewable opportunities by the CPUC or CEC. Once identified, the CREZs will be incorporated into the California ISO's Unified Planning Assumptions and Study Plan where they will be studied as part of that year's annual planning cycle. The California ISO will rely on RETI to guide the study priorities by identifying those zones that can be developed in the most cost effective and environmentally benign manner.

The second stage of the Transmission Planning Process is the performance of identified studies. The California ISO determines the appropriate entity to perform each identified technical study, which must conform to the Unified Planning Assumptions. The objective of the studies, as defined during the creation of the Study Plan, may encompass the development of transmission plans, whether conceptual or detailed, to access the identified region. These plans may encompass either network upgrades or Location Constrained Resource Interconnection Facilities (LCRIF) or both. For any technical study performed as part of the California ISO Transmission Planning Process, the California ISO has the discretion to collaborate with other entities. Thus, RETI may, with the consent of the California ISO and the Coordinating Committee, constitute the

appropriate forum to prepare transmission plans for identified CREZs that will be considered within the California ISO's Transmission Planning Process.

Location Constrained Resource Interconnection Facilities

The LCRIF constitutes a transmission financing mechanism recently filed by California ISO and approved by FERC in order to facilitate transmission for interconnecting generation located in remote areas (primarily renewables). In order to qualify for LCRIF financing treatment, the applicant's project must be located in an "Energy Resource Area" (ERA) designated by the state. California ISO anticipates that the ERAs associated with LCRIF financing will flow directly from the RETI process.

Addendum B
California Public Utilities Commission (CPUC)
Uses of RETI Deliverables/Information

The CPUC has opened an Investigation and Rulemaking on transmission for renewables – I.08-03-010 and R.08-03-009 – that will, if necessary, serve as a forum for RETI-related actions or decisions. In addition to the below, information about RETI's value to the CPUC is detailed in the Frequently Asked Questions prepared by the RETI Coordinating Committee: http://www.energy.ca.gov/reti/RETI_FAQ.PDF.

Review of applications for Certificates of Public Convenience and Necessity (CPCNs) for transmission lines

The CPUC will be required in coming years to initiate proceedings to review an historic number of proposed transmission projects, and we can expect more scrutiny of such projects than we've seen in the past. A major purpose of RETI is that it will serve to supplement the public record in those proceedings by providing detailed analysis regarding the comparative costs and benefits of renewable resource areas that proposed transmission projects would interconnect. In short, RETI will provide objective, publicly-vetted resource and cost information that can inform these transmission proceedings.

The analytical aspect of RETI is critical to the CPUC's participation in RETI. California is prepared to make a multi-billion dollar investment renewable energy. The transmission to facilitate the development of the Tehachapi Wind Resource Area, for example, is projected to cost over \$1.8 billion. The associated generation investment is projected to cost approximately \$8 billion. Thus, total Tehachapi development costs are currently projected at roughly \$10 billion. However, the CPUC currently has no effective way of comparing the relative ratepayer benefit of renewable development in Southern California, Western Arizona, Western Nevada, British Columbia, Imperial Valley, and other areas. Given that California ratepayers are expected to pay for both transmission investment and generation costs, and because the ultimate charge of the CPUC is to protect consumers and ensure safe, reliable utility service at reasonable rates, the state has a responsibility to provide its decision makers with information that supports them in making decisions in the best interests of those ratepayers. Hence, one major purpose of RETI is to provide rigorous analysis regarding the comparative costs and benefits of CREZs and associated major transmission projects, so that decision makers are informed about the choices they are asked to make.

To be clear, however, RETI will not pre-judge the CPUC's review of any proposed transmission project submitted for its review. As detailed above, RETI will provide the CPUC with much-needed information and analysis that can inform these transmission proceedings and may also serve to smooth and expedite review by involving a wide range of stakeholders early on in a consensus-based process.

Review of Investor-Owned Utility (IOU) contracts for RPS-eligible energy

RETI Phase 1 will give the CPUC benchmarks to which it may compare the resource and cost information associated with power purchase agreements under its review. For example, this information may help the CPUC to identify developers who "low-ball" their bids in order to win RPS solicitations, pushing out experienced developers who offer projects at viable prices. Such actions prevent the development of viable projects and can cause delays in reaching our RPS goals, as developers with unviable projects come back to the IOU and the CPUC for contract price-reopeners or simply default on their contractual milestones. Conversely, the resource information provided by RETI Phase 1 may help to identify developers using market power to extract large profit margins.

RETI will not establish RPS contract reasonableness standards, but it will provide data points that will allow the CPUC to raise flags and ask additional questions when appropriate.

Addendum C
Publicly Owned Utilities' Statement Regarding RETI

The RETI outputs will provide a valuable benchmark for evaluating cost effective alternative renewable resource zones and potential transmission corridors. It would also provide the basis for consideration of joint transmission projects where appropriate. The POU's view the RETI outputs as an important part of the inputs into our evaluations of transmission options for accessing new renewable resources. The POU's cannot commit to making final transmission decisions solely on the basis of RETI outputs since our public boards have to include other considerations, such as access to other possible resources, improvements to system load serving capability, and grid reliability improvements. With respect to joint transmission projects, the POU's are open to the concept when proper consideration is given to POU needs for load ratio share transmission ownership allocations and recognition of appropriate balancing authority control of the transmission.

Addendum D
California Energy Commission
Transmission Corridor Designation Process

The California Energy Commission (Energy Commission) has authority under Public Resources Code (PRC) 25330-25341 to process applications to designate transmission corridors on non-federal lands in California. PRC 25330-25341 also authorizes the CEC to file applications on its own motion. The Energy Commission's Transmission Corridor Designation Program is intended to help ensure that projected transmission paths are preserved until they are needed, and subsequent transmission line permit applications are processed with either the California Public Utilities Commission (CPUC) or the publicly owned utilities (POUs). The CEQA environmental documentation (e.g., Program EIR) conducted under the transmission corridor designation process can be utilized at a later date by both the CPUC and POU's when permitting transmission line projects based on corridors designated by the Energy Commission. Specifically, the CPUC and POU's can "tier off" of Energy Commission corridor environmental review/documentation, and in doing so, effectively streamline their transmission permitting process. PRC 25330-25341 also requires the Energy Commission to update designation corridors over time to ensure the analysis is up-to-date and ultimately more useful whenever the transmission permitting process is initiated.

The Energy Commission could process applications for corridor designation, and/or to file corridor designation applications on its own motion as authorized under PRC 25330-25341, that are based on longer-term transmission needs identified by RETI to interconnect high priority competitive renewable energy zones (CREZs) in the future.